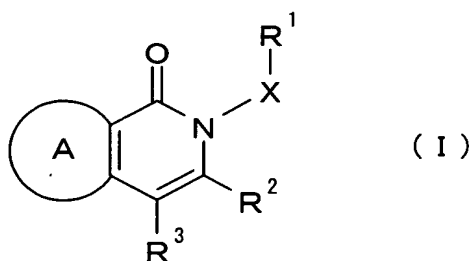


## CLAIMS

1. An agent for modulating the function of an RFRP receptor, which comprises a compound represented by the  
 5 formula:

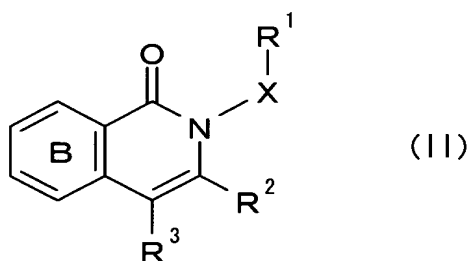


wherein a ring A represents an optionally substituted aromatic ring; X represents a bond, O, NR<sup>4</sup> (R<sup>4</sup> represents a hydrogen atom, an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group), or an optionally substituted alkylene group; R<sup>1</sup> represents an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group; R<sup>2</sup> represents a group represented by the formula -COYR<sup>5</sup> (Y represents a bond, an optionally substituted alkylene group, O, S or NR<sup>6</sup> (R<sup>6</sup> represents a hydrogen atom, an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group), and R<sup>5</sup> represents an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group), an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group; and

$R^3$  represents an optionally substituted hydrocarbon group, an optionally substituted heterocyclic group, an optionally substituted hydroxy group, an optionally substituted amino group, or a group represented by the formula  $-S(O)_nR^7$  ( $R^7$  represents an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group, and  $n$  is an integer of 0 to 2), or a salt thereof, or a prodrug thereof.

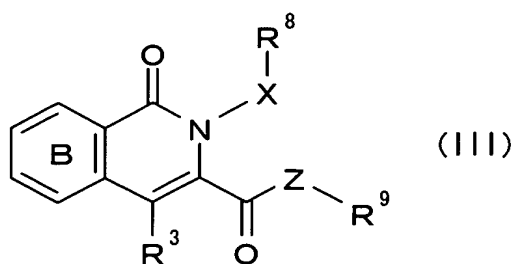
2. The agent according to claim 1, wherein  $R^3$  is an optionally substituted hydroxy group.

3. The agent according to claim 1, which comprises a compound represented by the formula:



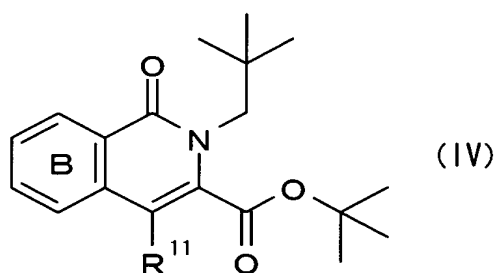
wherein a ring B represents an optionally substituted benzene ring; and the other symbols are as defined in claim 1, or a salt thereof, or a prodrug thereof.

4. The agent according to claim 1, which comprises a compound represented by the formula:



wherein a ring B represents an optionally substituted benzene ring; Z represents a bond, an optionally substituted alkylene group, O, S or NR<sup>10</sup> (R<sup>10</sup> represents a hydrogen atom, an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group); R<sup>8</sup> and R<sup>9</sup> each represents an optionally substituted branched hydrocarbon group; and the other symbols are as defined in claim 1, or a salt thereof, or a prodrug thereof.

5. The agent according to claim 1, which comprises a compound represented by the formula:



wherein a ring B represents an optionally substituted benzene ring; and R<sup>11</sup> represents an optionally substituted hydroxy group, or a salt thereof, or a prodrug thereof.

6. The agent according to claim 1, which is an analgesic, an agent for promoting analgesic activity of

another analgesic drug, or an agent for avoiding resistance due to another analgesic drug.

7. The agent according to claim 1, which is an agent for modulating the prolactin secretion.

5        8. The agent according to claim 1, which is an agent for preventing or treating hyperprolactinemia, pituitary gland tumor, diencephalons tumor, emmeniopathy, stress, autoimmune disease, prolactinoma, infertility, impotence, amenorrhea, galactic leakage, acromegaly, Chiari-Frommel  
10 syndrome, Argonz-del Castilo syndrome, Forbes-Albright syndrome, breast cancer lymphoma, Sheehan's syndrome or spermatogenesis abnormality.

9. The agent according to claim 1, which is a pancreatic glucagon secretion inhibiting agent, a blood  
15 glucose lowering agent or a urine production inhibiting agent.

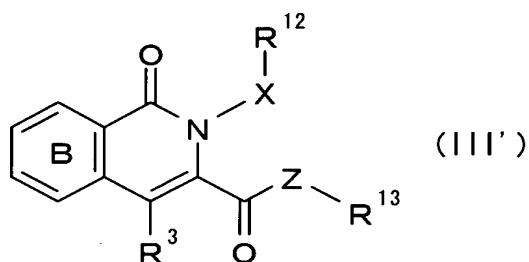
10. The agent according to claim 1, which is an agent for preventing or treating diabetes, glucose tolerance disorder, ketosis, acidosis, diabetic neuropathy, diabetic  
20 nephropathy, diabetic retinopathy, pollakiuria, nocturnal enaruisis, hyperlipemia, sexual function disorder, skin disease, arthritis, osteopenia, arteriosclerosis, thrombotic disease, maldigestion or memory and learning disabilities.

25        11. The agent according to claim 1, which is a

bladder constriction inhibiting agent.

12. The agent according to claim 1, which is an agent for preventing or treating urine incontinence, lower uropathy, urge micturition due to excessive active bladder, or hypotonic bladder accompanied with excessive active bladder.

13. A compound represented by the formula:



wherein a ring B represents an optionally substituted benzene ring; X represents a bond, O, NR<sup>4</sup> (R<sup>4</sup> represents a hydrogen atom, an optionally substituted hydrocarbon group, and an optionally substituted heterocyclic group), or an optionally substituted alkylene group; Z represents a bond, an optionally substituted alkylene group, O, S or NR<sup>10</sup> (R<sup>10</sup> represents a hydrogen atom, an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group); R<sup>12</sup> and R<sup>13</sup> each represents an optionally substituted C<sub>3</sub> or higher hydrocarbon group; and R<sup>3</sup> represents an optionally substituted hydrocarbon group, an optionally substituted heterocyclic group, an optionally substituted hydroxy group, an optionally substituted amino

group, or a group represented by the formula  $-S(O)_nR^7$  ( $R^7$  represents an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group, and  $n$  is an integer of 0 to 2), or a salt thereof, provided that tert-butyl 6-fluoro-4-hydroxy-2-neopentyl-1-oxo-1,2-dihydro-3-isoquinolinecarboxylate, tert-butyl 4-butoxy-6-fluoro-2-neopentyl-1-oxo-1,2-dihydro-3-isoquinolinecarboxylate, tert-butyl 7-benzyloxy-4-hydroxy-2-isobutyl-1-oxo-1,2-dihydro-3-isoquinolinecarboxylate and tert-butyl 6-benzyloxy-4-hydroxy-2-isobutyl-1-oxo-1,2-dihydro-3-isoquinolinecarboxylate are excluded.

14. The compound according to claim 13, wherein  $X$  is a methylene group.

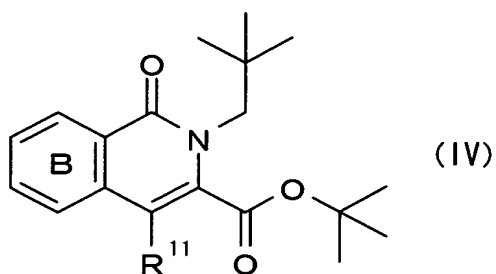
15. The compound according to claim 13, wherein  $Z$  is an oxygen atom.

16. The compound according to claim 13, wherein  $R^{12}$  is a tert-butyl group.

17. The compound according to claim 13, wherein  $R^{13}$  is a tert-butyl group.

20. 18. The compound according to claim 13, wherein  $R^3$  is an optionally substituted hydroxy group.

19. The compound according to claim 13, which is represented by the formula:



wherein a ring B represents an optionally substituted benzene ring; and R<sup>11</sup> represents an optionally substituted hydroxy group.

5           20. (i) Ethyl 7-bromo-4-hydroxy-2-neopentyl-1-oxo-1,2-dihydroisoquinoline-3-carboxylate, (ii) ethyl 8-hydroxy-6-neopentyl-5-oxo-5,6-dihydro[1,3]dioxolo[4,5-g]isoquinoline-7-carboxylate, (iii) N-{2-[benzyl(methyl)amino]ethyl}-6,7-dichloro-4-methoxy-2-neopentyl-1-oxo-1,2-dihydro-3-isoquinolinecarboxamide, (iv)

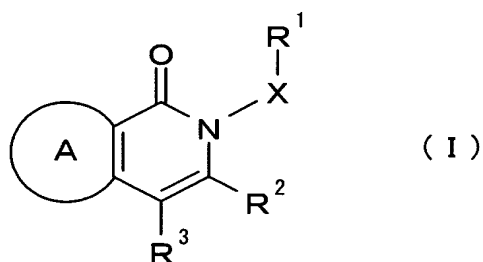
10 methyl 6,7-dichloro-4-hydroxy-2-neopentyl-1-oxo-1,2-dihydro-3-isoquinolinecarboxylate, (v) methyl 6,7-dichloro-4-methoxy-2-neopentyl-1-oxo-1,2-dihydro-3-isoquinolinecarboxylate, or a salt thereof.

15           21. A prodrug of the compound according to claim 13 or 20.

          22. A drug comprising the compound according to claim 13 or 20 or a prodrug thereof.

20           23. The drug according to claim 22, which is an agent for preventing or treating RFRP-relating disease states or diseases involving RFRP.

24. A method of modulating the function of an RFRP receptor, which comprises administering an effective amount of a compound represented by the formula:

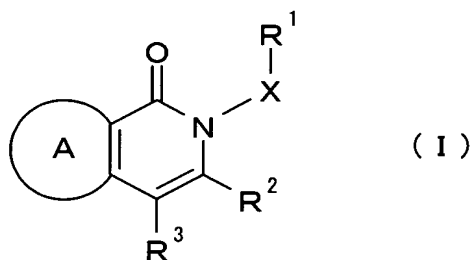


5 wherein a ring A represents an optionally substituted aromatic ring; X represents a bond, O, NR<sup>4</sup> (R<sup>4</sup> represents a hydrogen atom, an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group), or an optionally substituted alkylene group; R<sup>1</sup> represents an  
 10 optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group; R<sup>2</sup> represents a group represented by the formula -COYR<sup>5</sup> (Y represents a bond, an optionally substituted alkylene group, O, S or NR<sup>6</sup> (R<sup>6</sup> represents a hydrogen atom, an optionally substituted  
 15 hydrocarbon group, or an optionally substituted heterocyclic group), and R<sup>5</sup> represents an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group), an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group; and  
 20 R<sup>3</sup> represents an optionally substituted hydrocarbon group, an optionally substituted heterocyclic group, an optionally



substituted hydroxy group, an optionally substituted amino group, or a group represented by the formula  $-S(O)_nR^7$  ( $R^7$  represents an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group, and  $n$  is an integer of 0 to 2), or a salt thereof, or a prodrug thereof to a mammal.

25. Use of a compound represented by the formula:



wherein a ring A represents an optionally substituted aromatic ring; X represents a bond, O,  $NR^4$  ( $R^4$  represents a hydrogen atom, an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group), or an optionally substituted alkylene group;  $R^1$  represents an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group;  $R^2$  represents a group represented by the formula  $-COYR^5$  (Y represents a bond, an optionally substituted alkylene group, O, S or  $NR^6$  ( $R^6$  represents a hydrogen atom, an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group), and  $R^5$  represents an optionally substituted hydrocarbon group, or an optionally substituted

heterocyclic group), an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group; and  $R^3$  represents an optionally substituted hydrocarbon group, an optionally substituted heterocyclic group, an optionally substituted hydroxy group, an optionally substituted amino group, or a group represented by the formula  $-S(O)_nR^7$  ( $R^7$  represents an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group, and  $n$  is an integer of 0 to 2), or a salt thereof, or a prodrug thereof for preparing an agent for modulating the function of an RFRP receptor.